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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/847,395	05/03/2001	Marc M. Rehfeld	206748US3	6479

22850 7590 11/15/2004

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

FERGUSON, LAWRENCE D

ART UNIT PAPER NUMBER

1774

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/847,395

Applicant(s)

REHFELD ET AL.

Examiner

Lawrence D. Ferguson

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,7 and 11-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,7,11 and 14-17 is/are rejected.
- 7) ☒ Claim(s) 12,13,18 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment mailed August 31, 2004. Claims 1, 3, 7 and 11 were amended rendering claims 1-3, 7 and 11-19 pending.

New Matter - 35 U.S.C. 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 3 and 7, 11-19 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In instant claims 1, 3, 7 and 11, the broader phrase " J_{ref} is a reference critical energy value" and " d_{ref} is a reference thickness" are not supported by the specification. There is proper support for the original disclosure of " J_{ref} is a reference critical energy value of polyvinyl butyral (PVB) film and is equal to 35,100 J/m² for a temperature of 20° C drawing rate of 100 mm/min applied to the PVB film; and d_{ref} is a reference thickness which corresponds to that of the PVB film and is equal to 0.38 mm." Paragraph 0044 on page 9 and

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paragraph 0049 on page 10 do not give sufficient support for " J_{ref} is a reference critical energy value" and " d_{ref} is a reference thickness" as argued by Applicant.

Claim Rejections – 35 USC § 103(a)

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3, 7, 11, 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marc Rehfeld et al. (U.S. 5,478,615).

Rehfeld discloses a laminated glazing with a plastic interlayer having properties of acoustic insulation (column 7, lines 28-35) where the glazing has two glass sheets having an interlayer (column 7, lines 34-35) and mechanical properties (column 2, lines 55-57). Rehfeld discloses the interlayer is a polymeric film (column 4, lines 59-65) where the interlayer has a critical frequency (column 2, lines 13-15) and comprises PVB (column 4, lines 53-56). The reference discloses a bar of 9 cm long and 3 cm wide, where the laminated glass comprises glass sheets of 4mm thick (column 5, lines 44-48). Rehfeld does not explicitly disclose the intermediate thickness is equal to $d_{ref} J_{ref}/J_c$, or the critical frequency value. The thickness of the intermediate layer and critical frequency value are optimizable features which directly affect and enhance the damping

property of the laminated glass pane by improving the durability and flexibility of the laminated glazing. It would have been obvious to one of ordinary skill in the art to optimize the intermediate layer because discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 USPQ 215. Additionally, Rehfeld discloses varying the glass thickness (column 2, lines 1-10). Rehfeld does not explicitly teach the loss factor, shear modulus, critical energy value or tearing resistance. These features are directly related to the specific laminated glazing materials used. Since the reference uses the same intermediate layer with the claimed acoustic and mechanical property criteria, the loss factor, shear modulus, critical energy value and tearing resistance would be expected to be the same as claimed, absent a showing of unexpected results.

Claim Rejections – 35 USC § 103(a)

6. Claims 3, 11, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garnier et al. (U.S. 5,478,615).

Garnier discloses a laminated window comprising at least one glass sheet and on an intermediate film having a loss factor greater than 0.6 and a shear modulus smaller than 2×10^7 N/m² in a temperature range of between 10 and 60 and in a frequency range of between 50 and 10,000 Hz (column 4, lines 16-24) with improved acoustic performance (column 3, lines 65-67) and improvement of the mechanical properties (column 4, lines 35-45). The reference further discloses the window is made of two glass sheets, where one layer comprises PVB (column 5, lines 10-16). Garnier

does not explicitly disclose the intermediate thickness is equal to $d_{ref} J_{ref}/J_c$, or the critical frequency value. The thickness of the intermediate layer and critical frequency value are optimizable features which directly affect and enhance the damping property of the laminated glass pane by improving the durability and flexibility of the laminated glazing. It would have been obvious to one of ordinary skill in the art to optimize the intermediate layer because discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 USPQ 215. Garnier does not explicitly teach the critical energy value or tearing resistance. These features are directly related to the specific laminated glazing materials used. Since the reference uses the same intermediate layer with the claimed acoustic and mechanical property criteria, the critical energy value and tearing resistance would be expected to be the same as claimed, absent a showing of unexpected results.

7. Claims 12-13 and 18-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The closest prior art does not teach or suggest the recited laminated glazing article further including wherein the polymer film is a composite comprising a polymer and reinforcing fibers embedded in the polymer.

Response to Arguments

8. Applicant submits in the amendment filed on March 15, 2004, in which subject matter related to a reference critical energy value PVB film was deleted from claims 1, 3, 7 and 11 has support in the originally filed specification in paragraph 0044 on page 9 and in paragraph 0049 on page 10. In instant claims 1, 3, 7 and 11, the broader phrase " J_{ref} is a reference critical energy value" and " d_{ref} is a reference thickness" are not supported by the specification. There is proper support for the original disclosure of " J_{ref} is a reference critical energy value of polyvinyl butyral (PVB) film and is equal to 35,100 J/m² for a temperature of 20° C drawing rate of 100 mm/min applied to the PVB film; and d_{ref} is a reference thickness which corresponds to that of the PVB film and is equal to 0.38 mm." Paragraph 0044 on page 9 and paragraph 0049 on page 10 do not give sufficient support for " J_{ref} is a reference critical energy value" and " d_{ref} is a reference thickness" as argued by Applicant.

Arguments to rejection under 35 U.S.C. 103(a) as being unpatentable over Marc Rehfeld et al. (U.S. 5,478,615) have been considered but are unpersuasive. Applicant argues Rehfeld does not disclose an intermediate layer that satisfies mechanical strength criteria based upon tearing resistance characteristics.

The tearing resistance is directly related to the specific laminated glazing materials used. Since the reference uses the same intermediate layer with the claimed acoustic and mechanical property criteria, the tearing resistance would be expected to be the same as claimed, absent a showing of unexpected results.

Rejection under 35 U.S.C. 103(a) as being unpatentable over Friedman et al (U.S. 5,908,704) in view of Hamdi et al (U.S. 5,598,669) is withdrawn because the reference does not explicitly teach acoustical properties.


Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is 571-272-1522. The examiner can normally be reached on Monday through Friday 9:00 AM – 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Lawrence Ferguson
Patent Examiner
AU 1774


RENA DYE
SUPERVISORY PATENT EXAMINER
11/10/04
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